NATMEC 2002: Management of Data Programs

Integration of Data Sources

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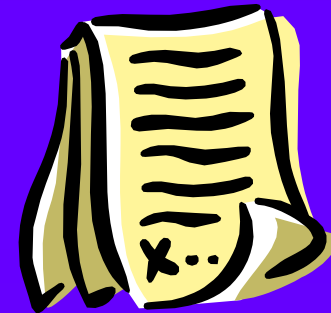
Data Integration Defined

♦ The real goal of data integration is to support the development and portrayal of <u>enterprise data</u> composed of a <u>common factual base</u> of information that supports inter-dependent programmatic goals.

♦ The managed coordination of institutional, business process and technical factors that enable sharing of data development, administration, management, analysis and dissemination activities.

Data Integration Drivers

- ◆ A mixed history
  - – 75% of data integration planning projects fail
  - – 75% of data integration projects never complete
- ◆ Fiscal constraints
- ◆ Fragmented data programs
  - – resulting in data gaps, overlaps and inconsistencies
- ◆ Advances in data technologies
  - – sensors, data storage (h/w & s/w), internet-enabled (cyber-applications)
- ◆ Emerging information needs
  - – national security, environmental justice, global trade, performance measurement

How did we get here?

- ◆ AASHTO Integrating Highway Information Peer Exchange

- ◆ TRB Data Integration Sub-Committee Efforts

- ◆ 22 years combined data integration consulting experience with DOT's

What did we find?

- An un-met need for a common set of data management best-practices and processes

- A road-map that provides clear directions for improved data management practices

- A useful checklist for embarking on a data integration effort

Checklists…*not just for "wimps"*

- FAA Guidelines require them for pilots (pre-takeoff and landing)
- SEC regulations identify several items for accounting/auditing
- Security operations
- Construction inspections

Checklist Framework

♦ Guiding principals from Peer Exchange
  – Assign clear roles, responsibilities and accountabilities
  – Provide transparent and adaptive technology
  – Define globally, deploy incrementally
  – Balance enterprise and local perspectives
  – Collaborate across institutional boundaries

Checklist Overview

- Items in the list are concrete indicators of the guiding principles
- Questions are more important than the answers
- Indicates readiness for data integration but does not guarantee success
- All items may not apply to all enterprises

Data Integration Checklist

- Assign clear roles, responsibilities and accountabilities
  - Does an executive level oversight structure exist?
  - Do clear data management policies and objectives exist?
  - Does the IT/IS organization support the goals of data integration?
  - Have specific roles been defined and assigned for data stewardship?
  - Do adequate resources exist (staffing, funding, consultants, etc…)?

Data Integration Checklist (cont'd)

♦ Provide transparent and adaptive technology

  – Do the enabling technologies exist and have they been incorporated into funding programs?

  – Does the organization have a data integration methodology and supporting toolset?

Data Integration Checklist (cont'd)

♦ Define globally, deploy incrementally
  – Have standards and guidelines been established for data content, accuracy, quality, accessibility, location referencing, security?
  – Are data integration objectives linked to business plans, strategies and initiatives?
  – Have priority data needs been identified?

Data Integration Checklist (cont'd)

♦ Balance enterprise and local perspectives
  – Have spillover opportunities been identified?
 – Is data viewed as a enterprise asset as opposed to a programmatic resource?

Data Integration Checklist (cont'd)

♦ Collaborate across institutional boundaries

- Does a overarching mechanism exist that will facilitate collaboration, communication and accountability within the data community?

- Have partnerships been established amongst producers and consumers?

Summary
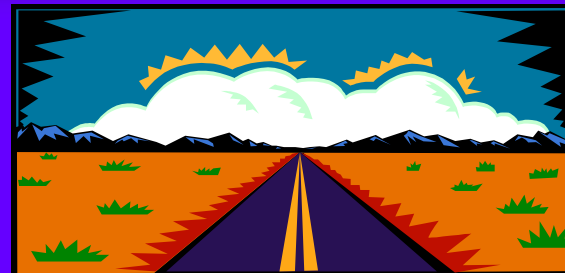
♦ Our goal is to improve odds of success

♦ Part of an ongoing discussion within the transportation community intended to highlight data integration best-practices and successes

♦ To participate in the TRB data integration community of practice/interest contact:
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